ABSTRACT

A method to design a nuclear fuel assembly having the following steps including establishing the falling speed of the control rod upon entry into the lower damping portion when the control cluster falls in the event of a shutdown of the nuclear reactor,establishing, based on the falling speed established in step a), the progression of the falling speed of the control rod in the lower damping portion, establishing, based on the progression of the speed established in step b), a maximum elevated pressure produced in the liquid contained in the lower damping portion, and establishing, based on the maximum elevated pressure established in step c), a maximum circumferential stress produced in the lower damping portion.